THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered
today (1) was not written for publication in a law
journal and (2) is not binding precedent of the Board.

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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

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Ex parte WALTER J. BERIONT
and MEHMET MUSTAFA

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Appeal No. 1996-2381
Application 08/220,953[1]

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ON BRIEF

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Before HAIRSTON, BARRETT, and GROSS, Administrative Patent
Judges.

BARRETT, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134 from
the final rejection of claims 1-7.

We reverse.

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[1] Application for patent filed March 31, 1994, entitled
"Method And System For Transmitting Synchronization Information
With Data," which is a continuation of Application 07/815,456,
filed December 31, 1991, now abandoned, which is a continuation-
in-part of Application 07/790,039, filed November 12, 1991, now
abandoned.

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BACKGROUND

The disclosed invention is directed to a method and system for transmission of synchronization (sync) information. A data stream of digital words is monitored at a transmit end and, upon the occurrence of two consecutive identical words, the second-occurring word is replaced by a SYNC symbol (a unique symbol that is different from any normal data word). At the receiver end the SYNC symbol is replaced by a copy of the immediately preceding word.

Claim 1 is reproduced below.

> 1. A method of preparing a sequence of consecutively ordered signal samples for transmission, wherein each signal sample is a digital representation of an analog signal quantity, comprising the step of:
>
> for each occurrence of two consecutive identical samples in said sequence, replacing the second-occurring one of said two consecutive identical samples with synchronization information.

The Examiner relies on the following prior art:

Gromen   4,468,789   August 28, 1984

Claims 1-7 stand rejected under 35 U.S.C. § 103 as being unpatentable over Gromen.

We refer to the Final Rejection (Paper No. 21) and the Examiner's Answer (Paper No. 24) (pages referred to as "EA__") for a statement of the Examiner's position and to the Brief (Paper No. 23) (pages referred to as "Br__") for a statement of Appellants' arguments thereagainst.

OPINION

The claims are grouped to stand or fall together (Br3).
We find that claim 1 is representative of the claims at issue.

Gromen is accurately summarized by Appellants in the
paragraph bridging pages 4 to 5 of the Brief. We agree with
the following argument by Appellants (Br4):

> Gromen neither teaches nor suggests using a SYNC symbol to
> replace the second-occurring one of the two consecutive,
> identical digital words. Rather, the SYNC symbol is used
> merely to indicate the beginning of a word transmission
> (i.e., it functions conventionally as a data boundary),
> and to indicate that the remaining bits of a word to be
> transmitted consist of an all-ZERO sequence.

This argument succinctly defines the difference between Gromen
and the claimed subject matter.

One misunderstanding the Examiner seems to have is that
the claimed subject matter is intended to operate on
consecutive identical <u>bits</u> (e.g., EA4: "the claimed invention
refers to one [of] two consecutive <u>bits</u>" (emphasis added)).
Claim 1 actually recites "consecutive identical <u>samples</u>"
wherein "each signal sample is a digital representation of an
analog signal quantity." Appellants use the term "digital
<u>word</u>" to refer to the sample in their arguments. The
specification discloses that the sample is a <u>byte</u>, where the
SYNC pattern is also a byte in length; however, the sample
could have a different number of bits. Thus, it is clear that
the disclosed invention is directed to multi-bit samples.

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It is true that the sample size is not claimed and, theoretically, could be any number of bits, including one. It is the Examiner's responsibility to show how claim 1 would have been obvious over Gromen assuming the sample size is interpreted to be one bit or several bits. It does not appear to us that the claimed method is practical with a one-bit sample size. The SYNC information has to be recognized as different from the data. Because SYNC information is sent with the same ONEs and ZEROs as the data, SYNC information would require more than one bit to distinguish over data. Consequently, the system would require more bits with the SYNC information than without it because every second consecutive identical bit would have to be replaced with at least two bits. A sample size of two bits or more does not have this problem.

The easiest way to demonstrate that the Examiner errs is to show that Gromen does not meet the claim language for two cases: (1) two consecutive, identical bits (i.e., a one-bit sample size); and (2) two consecutive, identical words (i.e., a multiple-bit sample size).

Consider the case of two consecutive identical bits. Gromen only replaces one or more ZEROs at the end (i.e., on the left) of the six-bit word with a SYNC signal, which acts as a word delimiter. Note that a SYNC signal is sent even when there is only one ZERO to the left of a ONE in the word, which

indicates that Gromen is not directed to using consecutive, identical samples. Gromen replaces all of the left end ZEROs with a SYNC signal; the claim language of "replacing the second-occurring one of two consecutive identical samples with synchronization information" implies that the first sample is retained, but does not preclude omitting the first sample. The problem is that Gromen does not teach or suggest replacing the second of two consecutive identical bits with a SYNC signal "for each occurrence of two consecutive identical samples in said sequence" (emphasis added) as recited in claim 1. Two or more consecutive ZEROs to the right of a ONE in the word does not cause a SYNC signal to be sent; only one or more ZEROs at the left end cause a SYNC signal to be sent. Two or more consecutive ONEs does not cause a SYNC signal to be sent (see times T3 through T6 in the table between columns 3 and 4).

Consider the case of two consecutive identical words. There will be a SYNC signal between each word, because the SYNC signal acts as a word delimiter. However, the second word is not replaced by the SYNC signal.

For the reason stated above, we agree with Appellants that the Examiner has failed to establish that Gromen discloses or suggests using a SYNC symbol to replace the second-occurring one of the two consecutive, identical digital samples. The rejection of claims 1-7 is reversed.

<div align="center">REVERSED</div>

KENNETH W. HAIRSTON
Administrative Patent Judge

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LEE E. BARRETT   )   BOARD OF PATENT
Administrative Patent Judge   )   APPEALS
)   AND
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